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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,439	07/17/2003	David Welch	2333	3569

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EXAMINER
SMITH, MARCUS

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2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/623,439	WELCH, DAVID	
	Examiner	Art Unit	
	MARCUS R. SMITH	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>14 July 2008</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-4, 6-7, 9-15, 17-18* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-4, 6-7, 9-15, 17-18* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1.   The amendment filed 7/14/08 is sufficient to overcome the rejection of claims 1-4,

6-7, 9-15, 17 and 18 based upon Mizutani et al. (US 7,085,579) and Kamstra et al. (US

6,768,720).

Allowable Subject Matter

2.   The indicated allowability of claim 16 is withdrawn in view of the newly

discovered reference(s) to Yao et al. (US 5,983,114). Rejections based on the newly

cited reference(s) follow.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-4, 6-7, 9-15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Mizutani et al. (US 7,085,579) in view of Kamstra et al. (US

6,768,720) and Yao et al. (US 5,983,114).

with regard to claims 1, Mizutani et al. teaches (see figure 2, 8, and 9):

A method comprising:

establishing a radio link layer connection (Radio channel) between a radio

access network (BSC, 105) and a wireless communication device (mobile station, MS,

102) (column 4, wherein the radio access network applies a radio link timer (state

transition timer, 901b) to the radio link connection (column 6, lines 29-36), wherein the

radio access network provides connectivity with a packet-switched network to bridge voice-over-packet communications between the wireless communication device and one or more other devices (column 7, lines 38-45);

establishing a data-link layer connection (PPP connection) over which data can be communicated between the wireless communication device and the radio access network (column 4, lines 40-52);

detecting that [[a]] the wireless communication device stop communicating in a threshold period of time (see figure 9, there is no communication after data was sent to mobile station, the period of time is PPP keep alive timer 902. column 7, lines 25-30); and

responsively sending from the wireless communication device into a radio access network at least one keepalive signal (PPP keep alive packet: column 7, lines 25-30 and see step 802 in figure 8), wherein the at least one keepalive signal resets the radio link timer (state transition timer 901b: column 7, lines 39-45).

Mizutani does not disclose all of the subject matter as described above except for detecting neither sent nor received packet-based real-time media over the data-link layer connection. Figure 9 just suggest that there was no communication since the last data was sent to mobile station.

However Kamstra et al. teaches method of for sending a heartbeat packet which is similar to keep alive packet in figure 5. And it explicitly teaches how a node determines if a packet has been received or a packet has been transmitted before

sending a heartbeat packet (see steps 520 and 550: column 5, lines 50-55) in order to keep link integrity in physical links.

Keeping link integrity in wireless system is keep the connection active and avoid disconnecting link. Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have method of determining if a packet has been received or a packet has been transmitted as taught by Kamstra et al. in the system of Mizutani in order to keep the connection active for greater efficiency.

The combination of Mizutani and Kamstra et al. discloses all of the subject matter as described above except for wherein the wireless communication device includes a push-to-talk button.

Yao et al. teaches a mobile device that has push-to-talk button (column 4, lines 35-50) in order to maintain link activity with minimum link power (column 4, lines 38-43).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have Mobile device have a push-to-talk button as taught by Yao et al. in the system of Mizutani and Kamstra et al. in order to maintain link activity with minimum link power.

with regard to claims 9, Mizutani et al. teaches (See claim 1 for the added limitations):

A cellular mobile station comprising:

a processor (see figure 4, 403: column 4, lines 54-60); and

a wireless communication interface (see figure 4, 404: column 4, lines 54-60: antenna), wherein the processor is programmed to make a determination that the

cellular mobile station stop communication for a threshold period of time(see figure 9, there is no communication after data was sent to mobile station, the period of time is PPP keep alive timer 902. column 7, lines 25-30); and

wherein the processor is programmed to respond to the determination by sending at least one keepalive signal via the wireless communication interface into a radio access network (PPP keep alive packet: column 7, lines 25-30 and see step 802 in figure 8),

whereby sending a keepalive signal from the cellular mobile station into the radio access network causes the radio access network to reset a radio-link timeout timer for a radio link assigned to the cellular mobile station (state transition timer 901b: column 7, lines 39-45).

Mizutani discloses all of the subject matter as described above except for detecting neither sent nor received packet-based real-time media over the data-link layer connection. Figure 9 just suggest that there was no communication since the last data was sent to mobile station.

However Kamstra et al. teaches method of for sending a heartbeat packet which is similar to keep alive packet in figure 5. And it explicitly teaches how a node determines if a packet has been received or a packet has been transmitted before sending a heartbeat packet (see steps 520 and 550: column 5, lines 50-55) in order to keep link integrity in physical links.

Keeping link integrity in wireless system is keep the connection active and avoid disconnecting link. Therefore it would have been obvious to one having ordinary skill in

the art at the time invention was made to have method of determining if a packet has

been received or a packet has been transmitted as taught by Kamstra et al. in the

system of Mizutani in order to keep the connection active for greater efficiency.

with regard to claims 12, Mizutani et al. teaches (See claim 1 for the added

limitations):

A communication system comprising:

a mobile station (See figure 4, 102) having a processor, data storage, a user

interface, and a wireless communication interface (column 4, lines 54-65);

a radio access network (BCS, 105) that communicates with the mobile station

over an air interface and that provides connectivity between the mobile station and a

packet-switched network (column 4, lines 41-48), wherein the radio access network is

arranged to establish a radio link layer connection with the mobile station over the air

interface (column 4, lines 41-48) and to release the radio link layer connection after a

predefined period of time during which no packet-data is communicated to or from the

mobile station over the air interface (column 6, lines 29-45), wherein the radio access

network applies a radio link timer (901B) to the radio link connection (column 6, lines

29-35) ;

wherein the mobile station is arranged to engage in packet-based real-time

media communications over a data-link layer connection (column 4, lines 41-48); and

wherein the mobile station is arranged (i) to detect there's no communication for

a threshold period of time that is less than the predefined period of time (see figure 9,

there is no communication after data was sent to mobile station, the period of time is

PPP keep alive timer 902. column 7, lines 25-30), and (ii) to responsively transmit

packet-data as a keepalive signal over the air interface (PPP keep alive packet: column

7, lines 25-30 and see step 802 in figure 8) to reset the radio link timer (state transition

timer 901b: column 7, lines 39-45).

Mizutani discloses all of the subject matter as described above except for

detecting neither sent nor received packet-based real-time media over the data-link

layer connection. Figure 9 just suggest that there was no communication since the last

data was sent to mobile station.

However Kamstra et al. teaches method of for sending a heartbeat packet which

is similar to keep alive packet in figure 5. And it explicitly teaches how a node

determines if a packet has been received or a packet has been transmitted before

sending a heartbeat packet (see steps 520 and 550: column 5, lines 50-55) in order to

keep link integrity in physical links.

Keeping link integrity in wireless system is keep the connection active and avoid

disconnecting link. Therefore it would have been obvious to one having ordinary skill in

the art at the time invention was made to have method of determining if a packet has

been received or a packet has been transmitted as taught by Kamstra et al. in the

system of Mizutani in order to keep the connection active for greater efficiency.

with regard to claims 2 and 10, Mizutani et al. teaches:

The method of claim 1, wherein sending at least one keepalive signal comprises periodically sending keepalive signals (column 7, lines 39-45, PPP keep alive packet is only sent periodically based on the PPP keep alive timer).

with regard to claims 3 and 11, Mizutani et al. teaches:

The method of claim 2, wherein the radio access network imposes a radio-link timeout period, and wherein periodically sending keepalive signals comprises:

sending keepalive signals at a period that is shorter than the radio-link timeout period (column 7, lines 8-16).

with regard to claim 4, Mizutani et al. teaches:

The method of claim 1, wherein, the wireless communication device communicates with the radio access network over a radio-link, and wherein sending at least one keepalive signal into the radio access network comprises:

sending keepalive signals into the radio-access network in order to hold open the radio link layer connection (column 6, lines 60-65)

with regard to claims 6, 13, and 15, Mizutani et al. teaches:

The method of claim 1, wherein the keepalive signal, which is sent in response to detecting that the wireless communication device has neither sent nor received packet-based real time media, is an empty Real-time Transport Protocol (RTP) packet (See figures 18 and 19, the examiner views the packets as empty RTP packet since does not carry any multimedia (RTP) data in the PPP connection.

with regard to claim 7, Mizutani et al. teaches:

The method of claim 1, wherein the radio access network provides connectivity with a packet-switched network, and wherein sending the keepalive signal into the radio access network comprises sending the keepalive signal into the radio access network for transmission, in turn, into the packet-switched network (column 7, lines 38-45).

with regard to claim 14, Mizutani et al. teaches:

The communication system of claim 12, further comprising a communication server on the packet-switched network, wherein the mobile station is arranged to send the packet-data as a keepalive signal to the communication server (PDSN, 106: column 4, lines 41-45).

with regard to claim 17, Mizutani et al. teaches:

The method of claim 1, wherein establishing the radio link layer connection comprises assigning the wireless communication device to operate on a particular traffic channel of an air interface (active state, column 6, lines 9-17).

with regard to claim 18, Mizutani et al. teaches:

The method of claim 1, wherein establishing a data-link layer connection comprises establishing a PPP session (column 4, lines 41-52).

Response to Arguments

5.   Applicant's arguments with respect to claims 1-4, 6-7, 9-15, 17, and 18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6.   Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS R. SMITH whose telephone number is (571)270-1096. The examiner can normally be reached on Mon-Thurs: 7:30 am - 5:00 p.m. and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRS 7/29/08

/STEVEN HD NGUYEN/
Acting SPE of Art Unit 2619/2600